The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A method for detecting and identifying a toxin in a sample, the method comprises:

providing an ~~a humidity equilibrated~~ array comprising a plurality of biological lipid membranes associated with a surface of a substrate in distinct microspots, the surface comprises a coating of an amine-presenting molecule, the biological lipid membranes comprise a mixture of a host lipid and a doped lipid deposited onto the surface, the doped lipid contains a toxin-binding moiety;

incubating the array in a humid chamber to enable lateral fluidity of the lipids;

contacting the array with a solution comprising a toxin; and

monitoring for binding activity of at least one of the biological lipid membranes with the toxin in the sample.

2. (Cancelled)

3. (Withdrawn) The method according to claim 2, wherein said toxin-binding moiety is a cell-surface protein.

4. (Previously Presented) The method according to claim 1, wherein the toxin- binding moiety is a carbohydrate.

5. (Previously Presented) The method according to claim 4, wherein the carbohydrate moiety is a ganglioside.

6. (Withdrawn) The method according to claim 2, wherein the toxin-binding moiety is a natural lipid, a synthetic lipid, or a lipid composition containing a toxin-binding receptor, or a purified receptor.

7. (Withdrawn) The method according to claim 6, wherein said toxin-binding moiety is an ion channel.

8. (Withdrawn) The method according to claim 8, wherein the toxin-binding receptor is a sodium channel, a potassium channel, a calcium channel, and any combination of ion channels, an acetylcholine receptor, a ryanodine receptor, a glutamate receptor, a ceramide, a ganglioside, a cerebroside, sulfatides or cholesterol.

9. (Cancelled)

10. (Previously Presented) The method according to claim 1, wherein the toxin has at least one constituent that is labeled.

11. (Previously Presented) The method according to claim 10, wherein the monitoring step comprises detecting for the presence of the label.

12. (Previously Presented) The method according to claim 1, wherein the monitoring step comprises detecting directly a physical change due to the binding of the toxin to the biological lipid membranes.

13. (Previously Presented) The method according to claim 1, wherein the toxin has no labeled constituent.

14. (Previously Presented) The method according to claim 1, wherein the method employs a labeled toxin or known compounds with an affinity to the toxin or to a receptor site of the toxin.

15. (Previously Presented) The method according to claim 1, the toxin detection sample can be a synthetic or natural toxin, or from a human, animal, plant, food, or environmental source.

16. (Original) The method of claim 1, wherein the substrate includes a glass, ceramic, metal-oxide, metal, non-metal, silicon, or polymer material.

17. (Previously Presented) The method according to claim 1, wherein the substrate is either nano- or micro-porous.

18. (Original) The method according to claim 1, wherein the substrate is configured as a bead, chip, a slide, a multiwell microplate, or a microcolumn.

19. – 26. (Canceled)

27. (Withdrawn) An array for identifying and detecting a toxin, the array comprising a plurality of biological membrane probes associated with a surface of a substrate; said biological membrane containing a toxin-binding moiety.

28. – 41. (Canceled)

42. (Currently amended) A method for detecting a binding event between a probe and target compound, the method comprising:

providing an ~~a humidity equilibrated~~ array comprising a plurality of biological lipid membrane microspots associated with a surface of a substrate, wherein the surface comprises a coating of an amine-presenting molecule, and each of the biological lipid membrane microspots comprises a mixture of a host lipid and a doped lipid deposited onto the surface;

incubating the array in a humid chamber to enable lateral fluidity of the lipids;

contacting a solution comprising a target compound with the array of probe biological lipid membrane microspots; and

detecting a binding event between at least one or more of the probe biological lipid membrane microspots with one or more constituents of the target compound.

43. (Previously Presented) The method of claim 42, wherein at least one of the constituents of the target compound is labeled and the detection step comprises detecting the presence of the label.

44. (Previously Presented) The method of claim 43, wherein the detection of the label is carried out by imaging based on fluorescence, phosphorescence, chemiluminescence, or resonance light scattering emanating from the bound target.

45. (Original) The method of claim 42, further comprising washing the substrate of unbound target prior to the detection step.

46. (Previously Presented) The method of claim 42, wherein the array of biological lipid membrane microspots is incubated with a labeled target compound and an unlabeled target compound, and the binding event between the unlabeled target compound and the probe is determined by measuring a decrease in the signal of the label due to competition between the labeled target and the unlabeled target compound for the probe.

47. (Original) The method of claim 42, wherein the target is unlabeled and the binding event is determined by a change in physical properties at the interface.

48. (Original) The method of claim 47, wherein the change in physical properties at the interface is a change in refractive index or electrical impedance.

49. (Currently amended) A method for identifying and detecting a toxin in a sample, the method comprising:

applying a composition as a plurality of microspots to a surface of a substrate, the composition comprising one or more lipid molecules, the surface comprising a coating of an amine presenting molecule;

incubating the substrate in a composition comprising toxin-binding moiety to form an array comprising a plurality of biological lipid membrane microspots;

~~providing a humidity equilibrated array comprising a plurality of biological lipid membrane microspots associated with a surface of a substrate, wherein the surface comprises a coating of an amine-presenting molecule, and each of the biological lipid membrane microspots comprises a mixture of a host lipid and a doped lipid deposited onto the surface~~;

contacting a sample comprising an unknown toxin with the array of biological lipid membrane microspots; and

detecting the binding profile of the unknown toxin to at least one or more of the biological lipid membrane microspots.

50. (Previously Presented) The method of claim 49, wherein the sample is a biofluid from a specific infectious tissue, a solution from food or environmental sources, or an aqueous solution comprising chemical toxins collected or concentrated from a contaminated gaseous medium.

51. (Previously Presented) The method according to claim 1, wherein the amine-presenting molecule is γ-aminopropylsilane.

52. (Previously Presented) The method according to claim 1, wherein the amine-presenting molecule is selected from the group consisting of poly-lysine, polyethyleneimine, and chitosan.

53. (Previously Presented) The method according to claim 42, wherein the amine-presenting molecule is γ-aminopropylsilane.

54. (Previously Presented) The method according to claim 42, wherein the amine-presenting molecule is selected from the group consisting of poly-lysine, polyethyleneimine, and chitosan.

55. (Previously Presented) The method according to claim 49, wherein the amine-presenting molecule is γ-aminopropylsilane.

56. (Previously Presented) The method according to claim 49, wherein the amine-presenting molecule is selected from the group consisting of poly-lysine, polyethyleneimine, and chitosan.

57. (Currently amended) A method for detecting a binding event between a receptor in a biological lipid membrane and a target compound, said method comprising:

applying a composition as a plurality of microspots to a surface of a substrate, the composition comprising one or more lipid molecules, the surface comprising a coating of an amine presenting molecule;

incubating the substrate in a composition comprising toxin-binding moiety to form an array comprising a plurality of biological lipid membrane microspots;

incubating the array in a humid chamber;

contacting a solution comprising the target compound with the array ~~a humidity equilibrated array which comprises a plurality of biological lipid membranes associated with a surface of a substrate, wherein each of the biological lipid membranes comprise a mixture of a host lipid and a receptor of interest and is deposited onto a coating of the surface of the substrate~~; and

detecting a binding event between one or more receptors in the biological lipid membranes and one or more constituents of the target compound~~, and wherein the coating of the surface comprises an amine-presenting molecule or a silane~~.

58. (Previously Presented) The method of claim 57, wherein the coating consists of a coating of the amine-presenting molecule.

59. (Previously Presented) The method of claim 58, wherein the amine-presenting molecule is selected from the group consisting of γ-aminopropylsilane, polyamine, and chitosan.

60. (Previously Presented) The method of claim 57, wherein the coating comprises a coating of the silane.

61. (Previously Presented) The method of claim 60, wherein the silane comprises a hydroxyl, a carboxyl, a phosphate, a sulfonated, or a thiol group.

62. (New) A method of forming a toxin-binding microspot array, the method comprising:

applying a composition as a plurality of microspots to a surface of a substrate, the composition comprising one or more lipid molecules, the surface comprising a coating of an amine presenting molecule;

incubating the substrate in a composition comprising one or more toxin-binding moieties to form an array comprising a plurality of biological lipid membrane microspots; and

incubating the array in a humid chamber.

63. (New) The method according to claim 62, wherein the step of incubating the array in a humid chamber is undertaken before the array is incubated in the composition comprising toxin-binding moiety.

64. (New) The method according to claim 1, wherein the toxin-binding moiety is a bacterial toxin binding moiety.

65. (New) The method according to claim 42, wherein the lipid is doped with a bacterial toxin binding moiety.

66. (New) The method according to claim 1, wherein the lipids have a mobile fraction of about 0.5.